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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,789	02/09/2005	Atsushi Tanno	OGW-0357	5705

7590 06/19/2009
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EXAMINER

BELLINGER, JASON R

ART UNIT	PAPER NUMBER
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3617

MAIL DATE	DELIVERY MODE
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06/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,789	Applicant(s) TANNO, ATSUSHI	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe (JP 10-278501) in view of Vaxelaire et al. Manabe shows a rim with all of the physical features as set forth in the claims. The thickness of the disk portion is greater than at least thickness T(c).

Manabe does not disclose the relationship (i.e. the specific dimensions) of rim thicknesses of adjacent equal sections. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the rim of Manabe with adjacent equal portions having average thicknesses of 0.5mm or more, generally being between 3-8mm on the disk side and 2-3mm on the flange side, in order to reduce the thickness (and thus weight) of the rim while still retaining suitable strength properties to prevent the rim from failing during use.

One of ordinary skill in the art at the time of the invention would have found it obvious to modify the wheel of Manabe in the manner set forth above, because choosing from a finite number of identified, predictable solutions, would yield a reasonable expectation of success. In this case, Manabe already teaches arranging a wheel rim to have different thicknesses at different locations along the rim. Furthermore, it is well known in the art that reducing the weight of a wheel increases handling

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characteristics, etc. of the wheel. One known method of reducing the weight of a wheel rim is by varying the thickness of the rim, as taught by Manabe.

While Manabe does not specify the exact thicknesses, as set forth in the claims, it would have been obvious to try a variety of combinations of thicknesses until the desired result (i.e. performance, durability, etc. characteristics) was achieved. See *KSR International Co. v. Teleflex Inc.* 550 U.S. ___, 82 USPQ2d 1385 (April 30, 2007).

Manabe does not disclose that the spring constant of the rim body portion is maintained such that the natural frequency of the wheel is greater than the natural frequency of the tire. Vaxelaire et al teaches the concept of changing the rigidity of a wheel by “stiffening” or reinforcing the wheel at various sections in order to prevent the natural frequency of the wheel from matching the natural frequency of a tire mounted thereon. Therefore, from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention that changing the thicknesses of various portions of the rim of Manabe would also function to change the natural frequency of the wheel compared to that of a tire mounted thereon, and that maintaining the natural frequency of the wheel to be greater (or at least different than) that of the tire would reduce sympathetic vibration and road noise.

Response to Arguments

3. Applicant's arguments with respect to claims 1 and 4-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references teach changing a wheel's physical properties to change the natural frequency of the wheel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason R Bellinger/
Primary Examiner
Art Unit 3617